

Claims 21 - 39 (New)

21. (New) Equipment for measuring water vapour flux density from a surface which equipment comprises:

(i) a measurement chamber with a single opening at one end, which opening is adapted to be placed against the test surface;

(ii) an air agitating means positioned within the measurement chamber; and

(iii) a means to measure the water vapour density within the chamber.

22. (New) Equipment as claimed in Claim 21 in which said air agitating means within the chamber is able to purge the chamber with ambient air before and/or after each measurement.

23. (New) Equipment as claimed in Claim 21 in which said air agitation means within the measurement chamber is a mechanical device.

24. (New) Equipment as claimed in Claim 21 in which said air agitation means comprises a fan.

25. (New) Equipment as claimed in Claim 21 including motive power means comprising electrical, pneumatic or other means for providing rotary, reciprocating or other motion to fluid mixing means comprising a propeller or paddle.

26. (New) Equipment as claimed in Claim 25 in which said motive power means is outside of the measurement chamber and is coupled to said agitator inside the measurement chamber by means of a shaft, electromagnetic or other form of coupling.

27. (New) Equipment as claimed in Claim 21 in which the means to measure the water vapour density within the chamber comprise sensor means for measuring quantities from which the density of water vapour within the chamber can be calculated.

28. (New) Equipment as claimed in Claim 27 in which at least one sensor comprises means for measuring the relative humidity in the chamber.

29. (New) Equipment as claimed in Claim 27 in which there are a plurality of sensors.

30. (New) Equipment as claimed in Claim 21 includes a sensor for measuring the absorption of infrared radiation of suitable wavelength by the vapour.

31. (New) Equipment as claimed in Claim 21 equipped with sensor means for measuring the density of a vapour other than water vapour for measuring the flux density of such vapour.

32. (New) Equipment as claimed in Claim 21 including means for starting the measurement manually by the operator or automatically by additional sensor means.

33. (New) Equipment as claimed in Claim 21 in which the measurement chamber is incorporated in a hand-held enclosure.

34. (New) Equipment as claimed in Claim 27 including sensor means for measuring both the relative humidity and the temperature within the chamber.

35. (New) A method for measuring vapour flux density from a surface which method comprises placing the open end of a measurement chamber with a single opening at one end against the surface,

agitating the air within the chamber and measuring changes of vapour flux density within the chamber.

36. (New) A method as claimed in Claim 35 including the step of purging said chamber with ambient air before and/or after each 7.

(New) A method as claimed in Claims 35 and 36 whereby the said measurement chamber is equipped with sensors and the rate of rise of water vapour density within it determined, which rate of rise is used to calculate water vapour flux density and related quantities.

38. (New) A method as Claimed in Claim 35 in which the vapour flux of vapours other than water vapour is measured.

39. (New) A method as claimed in Claim 35 including the step of mixing ambient air in the chamber to an extent such as to produce a vapour-air mixture of substantially uniform humidity and temperature.